



# King County

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## MEMORANDUM

DATE: May 8, 2007

TO: Metropolitan King County Councilmembers

FROM: Cheryle A. Broom, County Auditor

SUBJECT: County Vehicle Replacement Performance Audit

Attached for your review is the County Vehicle Replacement Performance Audit report. The primary objective of the audit was to evaluate the county's management of its vehicle replacement programs. The audit examines whether the county uses lifecycle cost analysis to determine the most cost-effective replacement schedule for county vehicles and whether the county manages its cost recovery process to ensure viability of the vehicle replacement program. The audit also assesses whether the county manages the size of its fleet to ensure the most efficient utilization of vehicles.

We found that the county follows many best practices for vehicle replacement. For example, the Fleet Administration Division of the Department of Transportation, which manages 73 percent of the county's light-duty vehicle fleet, uses a sophisticated lifecycle cost model to determine vehicles' optimum replacement point. The division also follows many best practices in developing its rental rates for motor pool customers.

We also found several areas where the county could improve its performance. The county does not currently routinely monitor its adherence to planned replacement schedules. In addition, the process of developing rental rates lacks transparency. Finally, most county vehicles are underutilized and could be used more cost-effectively. The report makes recommendations to improve accountability, transparency, and cost-effectiveness in the overall management of county vehicle replacement.

The County Executive agreed with the findings and recommendations directed to executive agencies. The Executive Response is included in the appendices of this report.

The audit recommends that the County Assessor develop an alternative, more cost-effective, method of providing vehicles for its employee business travel needs. The County Assessor did not concur with our recommendation. Both the Assessor's Response and our comments on the Assessor's Response are included in the appendices of this report.

**PERFORMANCE AUDIT**  
**COUNTY VEHICLE REPLACEMENT**



**King County**

Presented to  
the Metropolitan King County Council  
Labor, Operations & Technology Committee  
by the  
County Auditor's Office

Cheryle A. Broom, King County Auditor  
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Report No. 2007-01  
May 8, 2007

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# EXECUTIVE SUMMARY

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## **Introduction**

This performance audit evaluates the county's management of its vehicle replacement programs. The audit examines whether the county uses lifecycle cost analysis to determine the most cost-effective replacement schedule for county vehicles and whether the county manages its internal service fund and cost recovery process to ensure viability of the vehicle replacement program. The audit also assesses whether the county manages the size of its fleet to ensure the most efficient utilization of vehicles.

## **Background**

Our office recently completed several capital planning audits that found areas where the quality of analysis could be improved to ensure that the county cost-effectively manages its capital assets. We initiated this audit to evaluate whether different county agencies manage vehicle replacement programs using the lifecycle cost analysis techniques we identified in our prior audits.

Four agencies manage county vehicle fleets: three divisions of the Department of Transportation (Fleet Administration, Transit, and the Airport) and the Solid Waste Division of the Department of Natural Resources and Parks. Fleet Administration manages the vast majority (73 percent) of county light duty vehicles; Transit is second with 22 percent. Although this report addresses vehicle replacement issues at each of the four agencies, its main focus is on the agency that manages most of the county's fleet: Fleet Administration.

## **Conclusions and Recommendations**

This audit is organized into three main subjects: vehicle replacement, funding vehicle replacement, and vehicle utilization.

The following sections describe our conclusions and recommendations for those subjects.

*Vehicle Replacement*

We found that of the four county agencies that administer fleets, only Fleet Administration uses a lifecycle cost model to establish replacement criteria. Fleet Administration's model incorporates all of the elements we recommend for lifecycle cost models, and it produces the results we would have expected.

All four agencies review deviations from replacement criteria on a case-by-case basis, but none of the four have developed targets for average deviation from the standard. In adopting performance measures and targets for the replacement program, the agencies should formalize their systems for making early or late replacement decisions and clearly document how they calculate their measures.

Recommendation 1: Fleet Administration should use the discount rate recommended by Office of Management and Budget (OMB) for the Mean Annual Cost Equivalent (MACE) vehicle replacement model.

Recommendation 2: Transit should review a full year of operations and maintenance data for vehicles in the non-revenue fleet to assess whether its costs are comparable to the fleet covered by MACE. If Transit's data differs significantly from Fleet Administration's data, Transit should develop its own fleet replacement criteria.

Recommendation 3: King County fleet management agencies should establish performance measures and performance targets to track and communicate the effectiveness of their fleet replacement programs.

*Funding Vehicle Replacement*

Fleet Administration's chargeback rate methodology is equitable and consistent with several best practices for management of fleet vehicles. However, the methodology Fleet Administration uses to calculate rates is not transparent, making it difficult for Fleet Administration's customers to understand. In addition, Fleet Administration does not appear to review the adequacy of its rates.

The financial plan submitted as part of the 2007 budget shows the fund balance of Fleet Administration's main internal service fund will fall below the range required by executive policy, and is projected to continue to fall in the future. This led us to question whether chargeback rates were sufficient to cover expenses. Our questions about the adequacy of chargeback rates resulted in the correction of an error of approximately \$1.8 million that overstated the fund's expenses and understated the fund's balance.

Recommendation 4: Fleet Administration should make its chargeback rate model more transparent and accessible to the agencies that use motor pool services.

Recommendation 5: Fleet Administration should establish rates that fully recover costs and maintain the Motor Pool Fund balance within the range mandated by executive policy.

Recommendation 6: Fleet Administration should submit a revised financial plan for 2007 to the County Council by June 30, 2007.

Recommendation 7: Fleet Administration should review its procedures over the recording and reconciling of fund expenses to ensure that information reported in county financial systems is complete and accurate.

### *Vehicle Utilization*

Total fleet costs are lower if fewer vehicles are owned and utilized more intensively than if more vehicles are owned and utilized less intensively. This is primarily due to the avoidance of the fixed ownership costs of additional vehicles if fewer vehicles are utilized more intensively. While Fleet Administration publishes a target for vehicle utilization, there is no executive policy to ensure that agencies meet this target. There are also no policies for vehicle utilization for the fleets operated by Transit, Solid Waste, and the King County Airport.

Using Fleet Administration's target of 9,600 miles per year as a standard, many county vehicles are underutilized. Outside of the Sheriff's Office police vehicles, a large majority of county vehicles are underutilized in comparison to Fleet's target.

Two agencies, the Department of Development and Environmental Services (DDES) and the Assessor's Office, reimburse employees for using their personal vehicles for traveling on county business. In comparing the cost-effectiveness of these programs (called Runzheimer programs, after the company that determines the rate of reimbursement) to that of Fleet Administration's program, we found that the cost-effectiveness of these programs is largely dependent on utilization. The DDES program is cost-effective because the participants drive their personal vehicles for business use to a great extent. However, the program used by the Assessor's Office is costly and less efficient because participants only drive their personal vehicles for business use a relatively small amount.

Also, we looked at the size and mix of vehicles that are used by county agencies, as larger vehicles are more costly to own and operate than smaller vehicles. We found that there are very few



compact or subcompact vehicles in the county fleet. There are also large numbers of more costly pickup trucks, sport utility vehicles, and vans. However, while larger vehicles are more costly to own and operate than smaller vehicles, we found that costs are much more dependent on utilization than vehicle size. For example, a larger vehicle that is highly utilized is often less costly than a smaller vehicle that is underutilized. For this study, we did not attempt to determine the extent to which county agencies actually need these larger vehicles for their business purposes.

**Recommendation 8:** The County Executive should establish a vehicle utilization policy and appoint a committee of user agencies to establish criteria for exceptions to the policy and to monitor individual agency's compliance with the policy.

**Recommendation 9:** The Assessor's Office should discontinue using the Runzheimer program and identify a less costly alternative for providing for employee business travel needs.

#### **Summary of Executive Response**

The County Executive concurred with all the recommendations directed to executive agencies. See the appendices section for the complete text of the Executive Response.

#### **Summary of Assessor's Response**

The Assessor did not concur with the recommendation to end the program used by the Assessor's Office to reimburse employees for using personal vehicles for business travel. He contended that the issue should be studied further. See the appendices section for the complete text of the Assessor's Response.

#### **Summary of Auditor's Comments on Assessor's Response**

We agreed with the Assessor that work needs to be done to identify the most cost-effective alternative for providing for

employee business travel. However, we believe that the evidence is compelling that the Assessor's Office current program is not cost-effective and should be discontinued. See the appendices section for the complete text of the Auditor's Comments.

# 1 INTRODUCTION

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This chapter provides background for the audit and an overview of vehicles operated by King County that are covered in this audit's scope.

## **Audit Background**

**County Agencies  
Should Aim to Minimize  
Lifecycle Costs of  
Owning Vehicles**

From 2003 to 2005, the auditor's office conducted three audits that reviewed the processes involved in making capital investment decisions. In each of the audits, we found areas where the quality of analysis could be improved to ensure that the county was cost-effectively managing its capital assets. In the most recent capital audit, involving the Transit Division's Capital Improvement Plan, we discovered flaws in a model that Transit used in making decisions about replacing its non-revenue vehicle (NRV) fleet. In addition, we found that the county had several agencies employing different methodologies to manage their vehicle fleets, including different standards and approaches for determining when vehicles should be replaced. Our office initiated this audit to identify areas where the disparate replacement methodologies could be standardized to ensure that, regardless of which agency is planning to replace a vehicle, the lifecycle costs of owning county vehicles is minimized.

## **County Passenger Vehicle/Light Duty Fleet**

**Fleet Administration  
Manages 73% of  
County Vehicles;  
Transit Manages 22%**

Four agencies manage county vehicle fleets: three divisions of the Department of Transportation (Fleet Administration, Transit, and the Airport) and the Solid Waste Division of the Department of Natural Resources and Parks. Fleet Administration manages the vast majority (73 percent) of county light duty vehicles; Transit is second with 22 percent. Exhibit A below shows a breakdown of vehicle management responsibilities in the county.

**EXHIBIT A****Light Duty Fleet Breakdown**

	<b>Fleet</b>	<b>Transit</b>	<b>Solid Waste</b>	<b>Airport</b>	<b>Total by Type</b>
Cars	276	153	11	4	444
Police Cars	537	62	0	15	614
Trucks (includes SUVs)	534	131	51	17	733
Vans	227	136	5	6	374
<b>Total Light Duty Fleet</b>	<b>1574</b>	<b>482</b>	<b>67</b>	<b>42</b>	<b>2165</b>
<b>Percentage of Total</b>	<b>73%</b>	<b>22%</b>	<b>3%</b>	<b>2%</b>	<b>100%</b>

**SOURCE:** KCAO analysis

**Scope and Objectives**

This audit evaluates the county's approach to managing the replacement of its passenger/light duty vehicles. Central questions answered by the audit include whether the county effectively:

- Manages the internal service fund and cost recovery process in order to ensure adequate, ongoing funding for the vehicle replacement program.
- Uses lifecycle cost analysis to determine the most cost-effective replacement schedule for county vehicles.
- Manages the size of its fleet to ensure the most efficient utilization of vehicles.

**Scope of Work on Internal Controls**

We assessed internal controls relevant to the audit objectives. This included a review of Fleet Administration's written procedures for lifecycle cost analysis and chargeback rate calculations. It also included a review of each agency's utilization policies.

# 2 VEHICLE REPLACEMENT

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## Chapter Summary

This chapter describes the importance of an efficient and effective vehicle replacement program. It details the key components of such programs, including replacement criteria based on sound lifecycle cost analysis, commitment to following the criteria, and measuring the program's success. The chapter also evaluates current replacement program practices in the four county agencies with fleet management responsibilities and provides recommendations for improving them.

## Summary of Findings

### **Analysis Raises Concerns About Whether County Vehicles Are Being Replaced in the Most Cost-Effective Manner**

We found that of the four county agencies that administer fleets, only Fleet Administration uses a lifecycle cost model to determine when vehicles should be replaced. Transit and Airport's replacement criteria are borrowed from other entities' lifecycle cost models. Solid Waste's replacement criteria are based on professional judgment. None of the four agencies with fleet management responsibilities routinely use performance measures to monitor their adherence to vehicle replacement policies and report the cost-effectiveness of their vehicle replacement programs. Our analysis of fleet replacement performance measures raises concerns about whether county agencies are routinely replacing vehicles in the most cost-effective manner.

## Summary of Recommendations

We recommend that Fleet Administration follow Office of Management and Budget (OMB) policy guidance on discount rates for its lifecycle cost model. We also recommend that Transit

review its operations and maintenance data to ensure that using Fleet Administration's replacement criteria is appropriate. We recommend that each of the four agencies track and report performance measures for its fleet replacement plan and develop guidelines for when to deviate from the replacement plan.

**Setting Appropriate  
Vehicle Replacement  
Criteria Is Critical to  
Minimizing Lifecycle  
Costs**

**Vehicle Replacement Criteria**

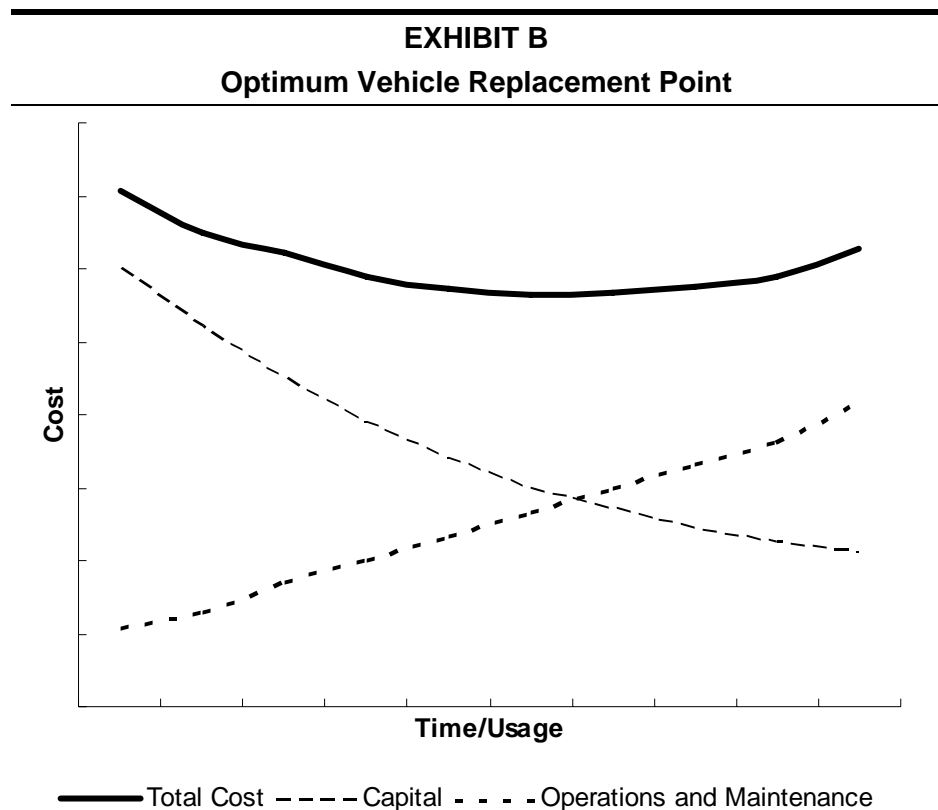
Vehicle replacement criteria are guidelines for when to remove vehicles from the fleet and buy new equipment to take its place. Choosing the right vehicle replacement criteria is critical to minimizing costs over the lifecycle of the vehicle. In addition to the direct benefits of minimizing lifecycle costs of the fleet, indirect benefits of timely fleet replacement include:

- Less vehicle downtime and a streamlined fleet achieved through the elimination of spares no longer needed to fill in for maintenance intensive vehicles.
- Reduced safety risks by driving vehicles with newer safety features.
- Enhanced employee morale and organizational image.

There are two valid approaches to establishing replacement criteria: performing a detailed lifecycle cost analysis or adopting criteria from an agency that has performed a lifecycle cost analysis for a similar fleet. The method chosen depends partially on the analytical capabilities of the fleet management agency and the quality and breadth of the data available for analysis.

Using the lifecycle cost method, the fleet management agency calculates the most economically advantageous time to dispose of its vehicles and replace them with new vehicles. Finding the optimal replacement point in the lifetime of a vehicle requires taking into account the *total ownership costs* of a vehicle. For example, over time, while fleet capital costs decrease, operating costs increase. Exhibit B shows a theoretical example of how

these two types of costs determine the optimal vehicle replacement point.



**SOURCE:** American Public Works Association.

The optimum time to replace vehicles is at the lowest point of the total cost line, before increased operations and maintenance costs force the total cost line to rise again. Well designed vehicle replacement programs take into account:

- initial purchase costs
- operations and maintenance costs
- downtime
- salvage value
- the time value of money

An alternative to performing a lifecycle cost analysis is using the replacement criteria from other organizations with comparable fleets which do conduct lifecycle cost analysis. Agencies

choosing this approach need to ensure that both their fleet (size, mix, procurement cost, and approach) and experience (usage, weather, operations, and maintenance) are similar to the agency from which they are adopting their criteria.

### **King County Vehicle Replacement Criteria**

All four of the agencies we evaluated have fleet replacement criteria. Exhibit C shows the replacement criteria each agency has established for the four types of passenger vehicles.

<b>EXHIBIT C</b>				
<b>King County Vehicle Replacement Criteria (Vehicle Miles or Years)</b>				
	<b>Fleet</b>	<b>Transit</b>	<b>Solid Waste</b>	<b>Airport</b>
Cars	85,000	85,000 or 8 years	120,000 or 10 years	110,000, or 10 years
Police Cars	110,000	110,000 or 4 years	*	110,000, or 7 years
Trucks	100,000	100,000 or 8 years	120,000 or 10 years	100,000, or 10 years
Vans	100,000	100,000 or 8 years	120,000 or 10 years	110,000, or 10 years

**Note:** \*Solid Waste does not own police cars

**Source:** Provided by each of the four agencies

### **Fleet Administration Uses a Lifecycle Cost Model to Develop Its Replacement Criteria**

#### *Fleet Administration Replacement Criteria*

Fleet Administration established its replacement criteria using a computerized lifecycle cost model. Fleet Administration's model is designed based on a technical paper on replacement analysis written by the American Public Works Association (APWA). The model, called the Mean Annual Cost Equivalent (MACE), draws comprehensive information on vehicle costs from the division's fleet management database. For different groups (or classes) of county vehicles, MACE calculates an optimal replacement point. It also provides information about the cost of keeping a vehicle longer than the optimal point. For example, based on current vehicle use and maintenance, MACE calculates the optimal point for police cars at 100,000 miles. While this is less than Fleet



Administration's replacement criteria of 110,000 miles, the added cost of keeping police cars for 110,000 miles is only \$17.37 per vehicle. However, after 110,000 miles, costs increase dramatically, which indicates that it is more cost-effective to replace the vehicle before the cost escalation occurs.

**Fleet Administration's  
Lifecycle Cost Model Is  
Sophisticated and  
Well-Documented**

We found Fleet Administration's MACE model to be a sophisticated, practical version of APWA's theoretical paper. It included everything we would have expected to see in a lifecycle cost model, and it contained excellent documentation of its input, function, and output. Such detailed documentation is often overlooked in models of this type, but it is important to ensure that the department uses the model consistently and appropriately after current staff turns over.

We replicated the calculations for police vehicles and found that MACE produces the mathematically correct optimal replacement point. We also tested key assumptions in the model to determine what changes in the model's input change the resultant optimal interval. We found that MACE is not sensitive to changes in the discount rate or obsolescence. However, MACE *is* sensitive to changes in operations and maintenance costs. If operations and maintenance costs are different from those imported from Fleet Administration's database, the optimal replacement point could change.

Fleet Administration uses a three percent discount rate in the model to discount future cash flows to their present value. The King County Office of Management and Budget (OMB) has published instructions for capital projects analysis which require county agencies to use a discount rate of seven percent, or to provide OMB with a written rationale for deviating from this policy. Since the MACE model is not particularly sensitive to the

discount rate selected, we see no reason to deviate from King County's discount rate guidelines.

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**RECOMMENDATION 1**

Fleet Administration should use the discount rate recommended by OMB for the MACE vehicle replacement model.

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**Transit Uses the  
Replacement Criteria  
Developed by Fleet  
Administration***Transit Replacement Criteria*

Transit has chosen the alternative method of establishing criteria – it has adopted its replacement criteria from Fleet Administration. This is a valid approach for comparable fleets, and Transit's fleet has many similarities to Fleet Administration's. For example, it is subject to the same weather, the cars are acquired from the same vendor, and the vehicles are used on the same roads. However, Transit has noted that many of its vehicles have unique uses. For example, Transit has pickup trucks with pressure washers that spend much of the time idling while cleaning bus stops, rather than driving and accumulating miles. In addition, Transit employees, not Fleet Administration employees, provide maintenance for the Transit fleet. Both its unique uses and differences in the way Transit employees maintain their fleet could lead to operations and maintenance costs that are different from those experienced by Fleet Administration vehicles. Therefore, the replacement criteria used by Fleet Administration based on the cost patterns of Fleet Administration vehicles may or may not be valid for Transit vehicles.

We attempted to collect operations and maintenance data for Transit's fleet to assess the comparability of cost patterns with Fleet Administration vehicles. However, Transit financial systems only provide aggregated operations and maintenance data for all vehicles, and therefore separate cost data for the non-revenue

fleet vehicles is not available. Transit reports that it has implemented a new data system that will allow separate tracking of vehicle costs into the future.

## RECOMMENDATION 2

Transit should review a full year of operations and maintenance data for vehicles in the non-revenue fleet to assess whether its costs are comparable to the fleet covered by MACE. If Transit's data differs significantly from Fleet Administration's data, Transit should develop its own fleet replacement criteria.

### *Airport and Solid Waste Replacement Criteria*

The King County Airport adopted its replacement criteria from a municipal association. The Solid Waste Division reported that it used professional judgment in establishing its criteria. As shown in Exhibit C, the largest difference between the criteria developed by MACE and those developed by Solid Waste and Airport is that the latter two have different mileage criteria for replacing cars. While the MACE criterion is 85,000 miles, the Airport's criterion is 100,000 and Solid Waste's is 120,000 miles. However, Solid Waste and the Airport have only 15 cars between them. Assuming that they have similar operations and maintenance costs to Fleet Administration, our analysis shows that the total cost of having longer replacement criteria is approximately \$10,000 over the lifetime of all the vehicles.

### **Measuring Commitment to Replacement Criteria**

#### **Performance Measures Can Be Used to Track and Communicate Commitment to Replacement Criteria**

After establishing replacement criteria, it is important that agencies carry out their vehicle replacements according to the criteria. Agencies can use performance measures to track and communicate their adherence to replacement criteria. Performance measures are tools that enable an agency to track and report progress in meeting its organizational goals. Good

performance measures are objective and quantifiable and provide meaningful information to decision-makers.

Our industry research identified three performance measures that help illustrate whether a fleet management agency is adhering to its replacement criteria:

- Percent of vehicles replaced compared to those identified by the replacement criteria.
- Average deviation from replacement criteria.
- Average vehicle age/mileage.

Each of these measures is explained in detail in the following section. Performance measures allow managers and those with oversight responsibilities to determine, for example, whether the fleet management agency is following its own replacement policies, how much sooner (or later) vehicles are being replaced, and whether the current fleet is nearing replacement.

In conjunction with performance measures, each agency should develop performance targets. Performance targets are specific values of performance measures that provide the level of performance/service expected to be attained. The targets provide the bar against which actual performance data will be compared. For example, an agency may set a target of less than 5,000 miles as the average deviation from replacement criteria.

### **None of the Agencies Use Performance Measures for Fleet Replacement**

Currently, none of the four King County agencies routinely use these, or any other performance measures, to determine if they are replacing their vehicles according to their replacement policies and criteria.<sup>1</sup> Because they are not monitoring this information, the agencies do not know if they are following their own replacement policies.

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<sup>1</sup> Fleet Administration reports that it has periodically produced a report internally that evaluates its commitment to its replacement program.

### **King County Adherence to Replacement Programs**

We applied the three performance measures to data from each of the four agencies to determine whether they followed their stated replacement criteria. The results raised concerns that the agencies were not closely following their replacement guidelines.

#### *Percent of Vehicles Replaced Compared to Those Identified by the Replacement Criteria*

The first performance measure, percentage of vehicles identified for replacement that were actually replaced, gauges whether agencies are following through with the replacement criteria in specific cases. For example, in 2005, Fleet Administration's criteria identified 25 cars that had reached or exceeded their optimal mileage replacement points. However, only 14 of these cars, or 56 percent, were actually replaced. The following exhibit shows the results of our analysis using 2005 data.

#### **EXHIBIT D**

##### **Percent of Vehicles Replaced Compared to Those Identified by the Replacement Criteria, 2005**

	<b>Fleet</b>	<b>Transit</b>	<b>Solid Waste</b>	<b>Airport</b>
Cars	56%	41%	0%	0%
Police Cars	73%	50%	n/a	n/a*
Trucks	70%	11%	62%	75%
Vans	63%	0%	50%	20%

**Note:** \*No Airport police cars were identified for replacement in 2005.

Transit's replacement criteria for 2005 were slightly different from their current replacement criteria. This table uses Transit's 2005 criteria to calculate the performance measure.

**SOURCE:** KCAO analysis.

#### **Replacement Criteria Provide Guidance; Some Deviation from Criteria Is Appropriate**

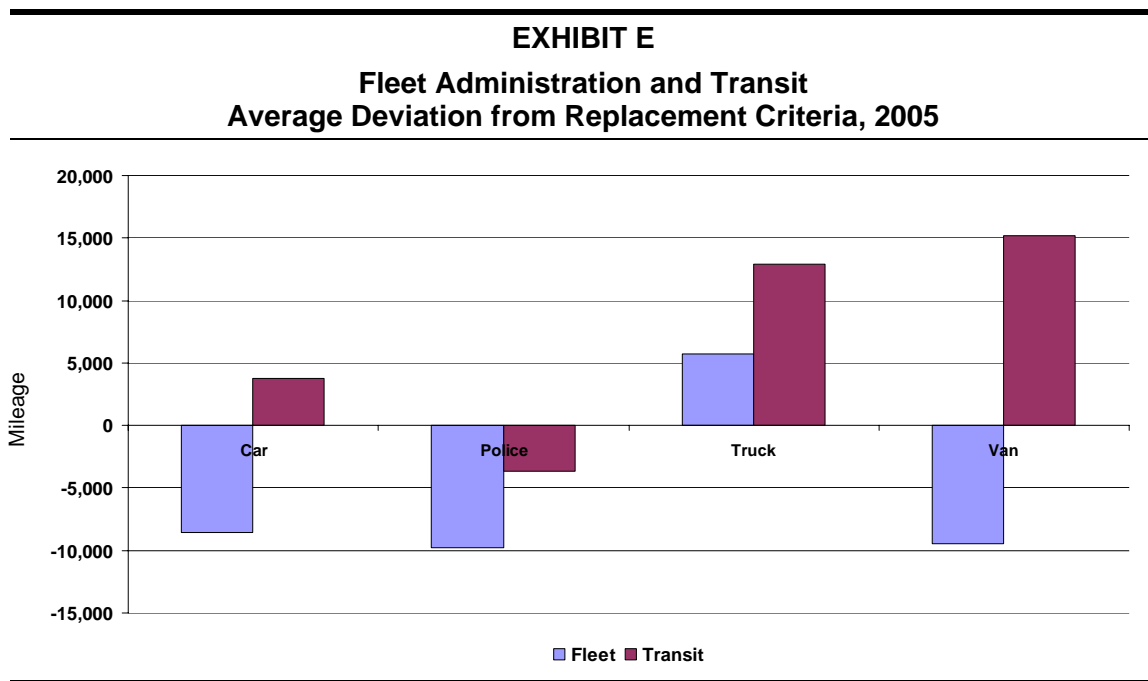
At first glance, these numbers seem surprisingly low. However, it is important to note that there are many reasons that the number should not be 100 percent. Replacement criteria provide general guidance for vehicle replacement, but it may be appropriate to keep vehicles longer than the replacement criteria call for. For example, if a major system, such as an engine or a transmission, has been replaced recently, a fleet management agency may determine that the vehicle has a longer useful life. Additionally,

funding may be inadequate to cover the entire fleet of vehicles that have met replacement criteria. Most importantly, agencies need to determine what deviation from their replacement criteria is acceptable and set a corresponding performance target.

**Average Deviation from Replacement Criteria Measures How Much Sooner or Later Vehicles Are Replaced Compared to Criteria**

*Average Deviation from Replacement Criteria*

The second performance measure, average deviation from replacement criteria, measures how much sooner or later an agency replaces vehicles compared to their replacement criteria. For example, on average in 2005, Fleet Administration replaced its cars 8,573 miles before they reached their optimal replacement point. Exhibit E shows how Fleet Administration and Transit's retention period compared to their mileage criteria for vehicles replaced in 2005. Bars below 0 indicate replacement sooner than the replacement criteria; bars above 0 indicate replacement after the replacement criteria. Smaller bars indicate close adherence to criteria.



**SOURCE:** KCAO Analysis

As Exhibit E shows, in 2005 both Fleet Administration and Transit kept trucks longer than their replacement criteria. Both agencies have 100,000-mile replacement targets, but Fleet Administration's trucks averaged 105,736 miles at replacement, and Transit's trucks averaged 112,924 miles at replacement. Both agencies replaced police cars before they reached their replacement criteria. Fleet Administration's police cars averaged 100,230 miles at replacement, compared to their 110,000-mile replacement criteria; Transit's police cars averaged 95,346 miles at replacement, compared to their 100,000-mile replacement criteria. Transit kept cars and vans beyond their replacement criteria, while Fleet Administration disposed of their cars and vans sooner than their criteria suggest.

Again, complete adherence to policy is not necessary. As noted in the previous discussion, some vehicles should be kept past their replacement criteria dictate. Conversely, some vehicles should be replaced sooner than their replacement criteria dictate. For example, vehicles that have been totaled in accidents and "lemon" vehicles are often quite appropriately disposed of before their scheduled replacement date. As with the previous performance measure, it is important that agencies set an acceptable range of deviation from their performance targets and have the ability and documentation to explain why replacements may deviate from their target. Also, agencies may choose to exclude accident vehicles from this measure, as long as that decision is appropriately documented.

All four agencies review deviations from replacement criteria on a case-by-case basis, but none of the four have developed targets for average deviation from the standard. In adopting performance measures and targets for the replacement program, the agencies should formalize their systems for making early or late

replacement decisions and clearly document how they calculate their measures.

**Trends Toward an  
Older or Higher  
Mileage Fleet May  
Indicate Departure  
from Replacement  
Criteria**

*Average Fleet Age/Mileage*

Monitoring the average fleet age and mileage also tracks adherence to the replacement program. A trend toward an older or higher mileage fleet may indicate that vehicles are not being replaced on time. Fleet management agencies should report this measure in conjunction with information on operations and maintenance costs to show the effect of aging fleet on ongoing costs.

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**RECOMMENDATION 3**

King County fleet management agencies should establish performance measures and performance targets to monitor their adherence to vehicle replacement policies and to communicate the effectiveness of their fleet replacement programs.



# 3

## FUNDING VEHICLE REPLACEMENT

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### Chapter Summary

This chapter evaluates whether Fleet Administration's chargeback rates are equitable to customers and generate sufficient revenue to pay for both ongoing costs and vehicle replacement. It offers recommendations to improve the long-term health of the cost recovery systems to ensure that the county is able to replace vehicles in an efficient and effective manner.

### Summary of Findings

Fleet Administration's chargeback rate methodology is equitable and consistent with several best practices for management of fleet vehicles. However, the methodology Fleet Administration uses to calculate rates is not transparent, making it difficult for Fleet Administration's customers to understand. In addition, Fleet Administration does not appear to review the adequacy of its rates.

### **Our Findings Led to the Correction of a \$1.8 Million Error**

The Motor Pool Fund's balance has been declining in recent years and is projected to continue to decline in future years to a level significantly less than that required by executive policy. This led us to question whether chargeback rates were sufficient to cover expenses. Our questions about the adequacy of chargeback rates resulted in the correction of an error of approximately \$1.8 million.

While there had been discussion between Fleet Administration and Finance regarding a possible accounting error, no correction was made nor was the magnitude of the error known. This error had the effect of overstating the Motor Pool Fund's expenses and understating its fund balance. No adjustment had been made for

the error until we raised questions about the adequacy of the fund balance shown in the financial plan.

While correcting this error improves the immediate condition of the fund, we questioned whether existing and future chargeback rates, as reflected in the financial plan for the Motor Pool Fund submitted in the 2007 executive proposed budget and adopted by the council, would generate sufficient revenue to cover projected costs.

### **Summary of Recommendations**

We recommend that Fleet Administration establish chargeback rates that fully recover costs and maintain a fund balance within the range mandated by executive policy. In addition, we recommend that Fleet Administration make its chargeback rate model more transparent and accessible to the agencies that use Motor Pool services. We also recommend that Fleet Administration submit a revised financial plan for 2007 to the County Council. Finally, we recommend that Fleet Administration review its procedures for the recording and reconciling of fund expenses to ensure that the amounts reported in county financial systems are complete and accurate.

### **Internal Service Funds and Chargeback Rates**

#### **Chargeback Rates Are Designed to Fully Recover the Costs of Operating, Maintaining, and Replacing Fleet Vehicles**

Internal service funds are used to account for goods and services provided by one government entity to another. Many public fleet management agencies use internal service funds to finance ongoing operations and the eventual replacement of the fleet they manage on behalf of other agencies. The fees that support these fleet administration costs are collected from other departments and are referred to as *chargeback rates*.

Chargeback rates are designed to recapture the full cost of operating and maintaining vehicles for other agencies as well as

building a reserve to replace aging vehicles. State law<sup>2</sup> and county policy<sup>3</sup> require that chargeback rates cover all costs associated with the fleet-related internal service funds.

### **Fleet Administration's Internal Service Fund and Chargeback Rates**

Fleet Administration manages three internal service funds: the Motor Pool Equipment Rental and Revolving Fund ("Motor Pool Fund"), the Wastewater Equipment Rental and Revolving Fund, and the Public Works Equipment Rental and Revolving Fund. This audit concerns the vehicles associated with the Motor Pool Fund.

Fleet Administration has developed chargeback rates for different agencies in the Motor Pool Fund. The rates are comprised of three main components:<sup>4</sup> operations, maintenance, and repair; overhead; and accumulation for replacement. Fleet Administration calculates the operations, maintenance, and repair portion of rates based on the actual cost of each individual vehicle and the individual agencies' vehicle usage patterns. For the overhead portion of the rate, Fleet Administration distributes some costs equally among the vehicles and other costs in proportion to the maintenance services the agencies have used in the past year.

In order to calculate the portion of the rate needed for vehicle replacement, Fleet Administration determines a useful life for each vehicle class. (Chapter 2 describes how Fleet Administration determines a vehicle's useful life.) Fleet Administration then divides the cost of replacing the vehicle by

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<sup>2</sup> RCW 36.33A.040

<sup>3</sup> Facility, Equipment, and Supply Management Administrative Executive Policy: FES 11-1 (AEP)

<sup>4</sup> The full formula is: Rate = (Annual Replacement Cost + Adjusted O&M + Other Overhead + County CX - Other Revenue)/Active Vehicle Count

the months of a vehicle's useful life to determine the monthly charge for replacement.<sup>5</sup>

### **Findings Concerning the Chargeback Rate Methodology**

Fleet Administration's chargeback rates are consistent with several best practices identified in the *Best Fleet Management Practices and Performance Measures Manual*.<sup>6</sup> In particular:

- Fleet has established a vehicle classification structure of like-type vehicles for setting equitable rates and identifying costs.
- The fixed ownership cost of vehicles is recovered through a monthly base rate, which includes an administrative overhead charge.
- For vehicles permanently assigned to agencies, Fleet Administration charges a monthly base rate plus a variable rate assessed for usage.

### **While Chargeback Rates Are Equitable, the Rate Model Is Not Transparent and Accessible for User Agencies**

Fleet Administration's model for developing chargeback rates takes several important factors into account: vehicle replacement costs, maintenance, and usage. We found this method to be equitable in that chargeback rates are developed for each agency based on the actual costs of each agency's individual vehicles in service and agency usage patterns. In addition, the methods used to calculate the monthly charge for replacement appear sound and consistent with industry practices.

Fleet Administration annually presents a general overview and explanation of rate methodology and components to county financial managers. Fleet Administration also reported that it makes an annual presentation to the Executive's Operations Cabinet meeting. As part of these presentations, Fleet Administration shares handouts that explain the major components of the rental rates. In addition, Fleet Administration

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<sup>5</sup> The monthly rental rate calculation is based on vehicle cost data from two years previous (For example, 2007 rates are based on 2005 vehicle costs, with some adjustment for inflation.)

<sup>6</sup> Spectrum Consultants, Inc.

annually surveys its customers soliciting feedback on satisfaction with its services.

Despite Fleet Administration's outreach efforts, the model is not sufficiently transparent. Fleet Administration's largest customer reported having difficulty understanding how its rates were derived, and our own experience was that the model is difficult to comprehend.

Fleet Administration's chargeback rate model and formulas are not self-contained and cannot be easily shared with user agencies. Fleet Administration is not able to provide the chargeback rate model with the intact underlying formulas used to calculate sample chargeback rates. Audit staff did verify that the model was accurate, but only after recreating the formulas within the model ourselves.

The inability to provide the model with electronically integrated information and explicit formulas can lead to misunderstandings about how rates are developed and how much agencies are charged for Motor Pool services. Fleet Administration could seek to avoid these misunderstandings by making its rate model – with formulas intact – available to any user agency that requests it.

The methodology for developing chargeback rates appears to be well designed. However, the Motor Pool Fund Financial Plan submitted in the 2007 Executive Proposed Budget projected the fund balance, which had already been declining, to decline further. It showed a balance by 2009 far below the amount required to ensure adequate funds are available to replace vehicles at the end of their useful lives. Based on that projection, we concluded that Fleet Administration does not appear to routinely check that rates are adequate and then adjust them to ensure that they are fully recovering costs, and funding an adequate reserve for future vehicle purchases. We did not

attempt to verify that actual charges and payments were accurate and consistent with the planned rates as that was beyond the scope of this audit.

**County Policy Requires  
the Motor Pool Fund  
Balance to Be Between  
10 and 20 Percent of  
the Cost of Replacing  
the Entire Fleet**

**Adequacy of Fund Balance**

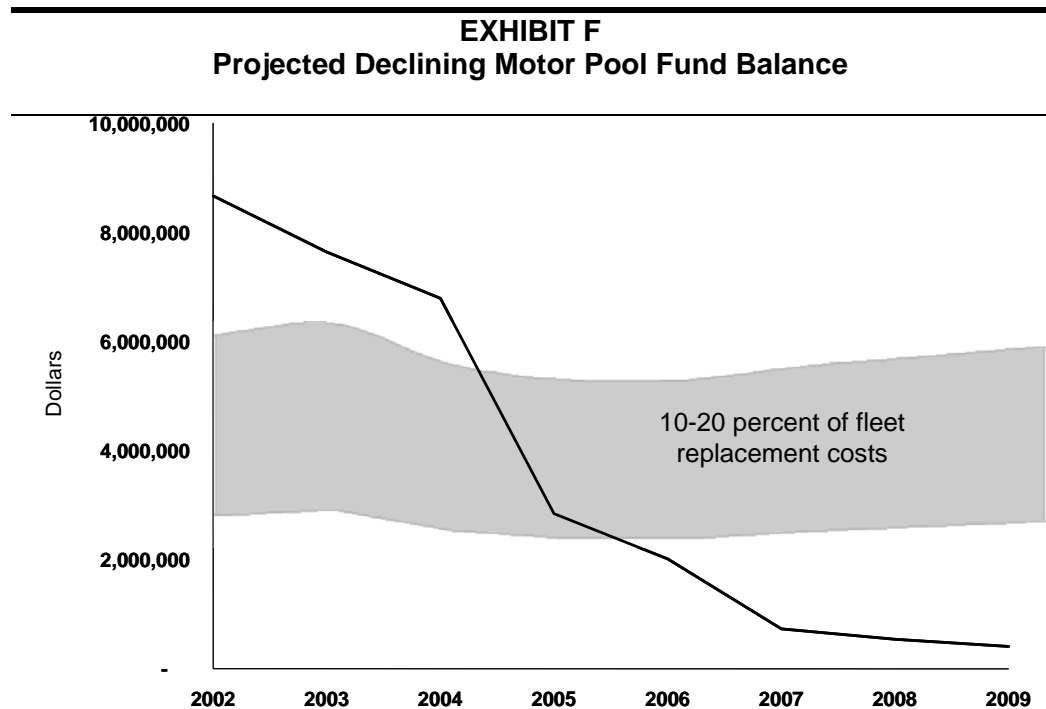
In a 1997 audit, this office found that Fleet Administration was maintaining an unnecessarily high balance in the Motor Pool Fund and recommended that Fleet Administration maintain the fund's balance between 10 and 20 percent of the cost of replacing the fund's entire fleet. The County Executive subsequently adopted a policy requiring that Fleet Administration maintain a fund balance within that recommended range.

During our current analysis of the Motor Pool's financial data, we noted that the Motor Pool Fund balance had been declining. In addition, the review of the 2007 Proposed Financial Plan indicated that Fleet Administration had projected the decline to continue through 2009.

The projected decline in fund balance raises two concerns. First, if the fund balance continues to decline at the projected rate, it could impair the fund's ability to replace vehicles when they reach their economic replacement point. Second, by 2009 the fund balance would be well below the range required by executive policy.

One reason for the decreasing fund balance is that the county has transferred funds totaling \$5.8 million out of the fund balance between 2000 and 2005. However, transfers out of the fund balance were not the only explanation for the declining fund balance. It was also declining, and projected to continue to decline, in years where no transfers took place. This trend led to our questions concerning whether the chargeback rates were

adequate to cover costs. Exhibit F shows the declining fund balance reflected in Fleet Administration's financial plan.



**SOURCE:** Fleet Administration Financial Plans

In response to our inquiries about fund balance, Fleet Administration disclosed that an accounting error had occurred in 2004 and 2005. While there had been discussion between Fleet Administration and Finance concerning a possible error in 2004 and 2005, no correction was made nor was the size or magnitude of the error known. In response to our audit questions, this error was brought to the attention of the county's chief accountant, who calculated that the error was ongoing from 2004 and resulted in the Motor Pool Fund balance being understated by \$1.8 million.

#### **Impact of Correcting Accounting Error**

After adjusting the financial data to correct for the \$1.8-million accounting error, the revised estimated fund balance for 2006 is

within the 10 to 20 percent range recommended by this office and required by executive policy.

However, to fully understand whether correcting the error addresses the declining fund balance in future years, Fleet Administration should revise the Motor Pool Fund 2007 Proposed Financial Plan and resubmit it to the County Council.<sup>7</sup>

#### **Fund Balance Transfers and the King County Sheriff's Office**

As we were completing the audit, we were made aware of an issue raised by the Sheriff's Office with respect to the \$5.8 million that the county transferred out of the Motor Pool Fund between 2000 and 2005. The Sheriff's Office stated that cities contracting with King County for police service contributed to the fund balance, and did not benefit from the transfers out of the fund balance. At the time the transfers were made, the balance was higher than the target range. The Sheriff's Office contention is that the cities were overcharged for vehicle replacement, and should have received a rebate when the Motor Pool Fund balance exceeded the target range and the transfers were made. We did not assess this issue in this audit, but believe that it should be investigated further. We understand that the County Executive's Internal Auditor and the Office of Management and Budget are investigating this issue, and we will follow up when their investigation is complete.

#### **Conclusion**

Fleet Administration's chargeback rate methodology appears soundly designed and consistent with best practices. Our review of the model validated that planned chargeback rates followed Fleet Administration's rate formula. However, we found that Fleet Administration's methodology was not sufficiently transparent for

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<sup>7</sup> During the technical review phase of the audit, Fleet Administration submitted to the Auditor's Office a revised Financial Plan for the Motor Pool Fund that reflects the correction of the accounting error and which projects that the fund balance will remain within the target range in 2008 and 2009.



user agencies. In addition, there are still questions whether projected chargeback rates are adequate, even when correcting for the accounting error discovered in the course of the audit. Finally, the discovery of accounting errors raised concerns about Fleet Administration's policies and procedures for the recording and reconciling of fund expenses and fund balance.

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**RECOMMENDATION 4**

Fleet Administration should make its chargeback rate model more transparent and accessible to the agencies that use motor pool services.

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**RECOMMENDATION 5**

Fleet Administration should establish rates that fully recover costs and maintain the Motor Pool Fund balance within the range mandated by executive policy.

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**RECOMMENDATION 6**

Fleet Administration should submit a revised financial plan for 2007 to the County Council by June 30, 2007.

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**RECOMMENDATION 7**

Fleet Administration should review its procedures over the recording and reconciling of fund expenses and fund balance to ensure that information reported in county financial systems is complete and accurate.

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# 4 COUNTY VEHICLE UTILIZATION

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## Chapter Summary

This chapter describes our analysis of the relationship between the amount that vehicles are utilized (i.e., the amount of miles they are driven per year) and the cost of using the vehicles. We examined vehicle utilization policies in the county, and how extensively the county's vehicles are utilized. We identified how costs of the county's vehicles vary with utilization. Further, we examined the relationship between utilization and costs in the "Runzheimer" programs in the Assessor's Office and Department of Development and Environmental Services (DDES), in which county employees are reimbursed for using their personal vehicles for business travel. Finally, we examined the mix of vehicle sizes and types that are used by county agencies.

## Summary of Findings

We found that vehicle costs per mile are lower if fewer vehicles are owned and utilized more intensively than if more vehicles are owned and utilized less intensively. This is because owning fewer vehicles avoids the fixed ownership costs of additional vehicles. While Fleet Administration publishes a target for vehicle usage per year, there is no executive policy for vehicle utilization. There are also no policies for vehicle utilization for the fleets operated by Transit, Solid Waste, and the Airport.

### **County Vehicles Are Underutilized**

Using Fleet Administration's target of 9,600 miles per year as a standard, many county vehicles are underutilized. Outside of the Sheriff's Office police vehicles, a large majority of county vehicles are underutilized in comparison to Fleet Administration's target.

**The Program Used by the Assessor's Office to Reimburse Employees for Using Private Vehicles Is Costly**

Two agencies, the DDES and the Assessor's Office, reimburse employees for using their personal vehicles for traveling on county business. In comparing these programs (called Runzheimer programs, after the company that determines the rate of reimbursement) to the use of county Fleet Administration vehicles, we found that their cost-effectiveness is largely dependent on utilization. The DDES program is cost-effective because the participants drive their personal vehicles for business use to a great extent. However, the program used by the Assessor's Office is costly because participants only drive their personal vehicles for business use a relatively small amount.

Also, we looked at the size and mix of vehicles that are used by county agencies, as larger vehicles are more costly to own and operate than smaller vehicles. We found that there are very few compact or subcompact vehicles in the county fleet. There are also large numbers of more costly pickup trucks, sport utility vehicles, and vans. However, while larger vehicles are more costly to own and operate than smaller vehicles, we found that costs are much more dependent on utilization than vehicle size. For example, a larger vehicle that is highly utilized is often less costly, per mile driven, than a smaller vehicle that is underutilized. For this study, we did not attempt to determine the extent to which county agencies actually need these larger vehicles for their business purposes.

**Summary of Recommendations**

We recommend that the County Executive establish a committee to develop and enforce policies for county vehicle utilization. The committee would establish guidelines for purchasing vehicle types, standards for vehicle usage, and exceptions to the guidelines and standards for unique circumstances. The committee would also periodically monitor vehicle utilization to

ensure that the standards are being met. We also recommend that the Assessor's Office eliminate its use of the more costly Runzheimer program.

### **Vehicle Utilization Definition**

#### **Vehicle Utilization Refers to the Number of Miles Driven Over a Period of Time**

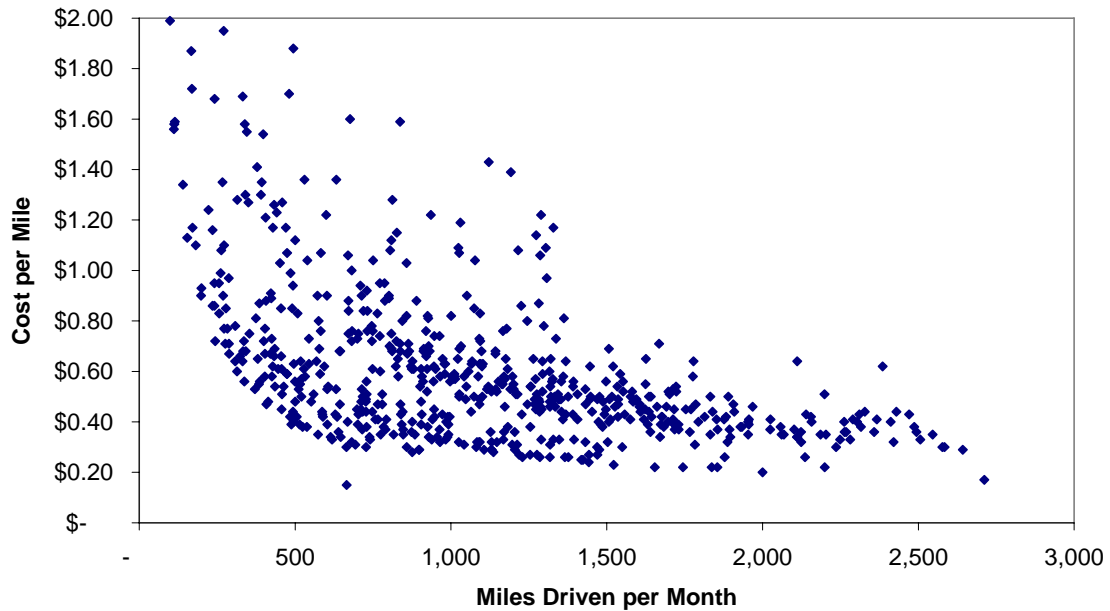
For the purposes of this audit, we are defining vehicle utilization as the amount of miles that vehicles are driven in a period of time, e.g., per month or per year. Vehicle utilization could also be defined as the percentage of time that a vehicle is being used. This distinction is important because the way a vehicle is used could affect the number of miles it is driven. For example, Sheriff's Office vehicles are driven a high number of miles per month, because the nature of the work of Sheriff's deputies involves a lot of driving. For other types of agencies, a vehicle may be primarily used to transport employees to meetings. If the trip is not far but the meeting consumes a lot of time, the vehicle could be in use much of the time, but not be driven a lot of miles. We only had data on the mileage that county vehicles are driven, not the amount of time the vehicle is in use.

Therefore, a caveat to the findings that will follow in this chapter is that vehicles that appear to be underutilized based on miles driven may not be underutilized based on the amount of time the vehicle is in use.

### **Relationship Between Miles Driven and Vehicle Cost**

Exhibit H plots the relationship between the number of miles driven per month and cost per mile for Fleet Administration automobiles. As the chart in Exhibit G below illustrates, the cost per mile decreases as vehicle utilization increases.

**EXHIBIT G**  
**Fleet Administration Automobiles Cost per Mile**  
**Decreases as Utilization Increases**



**SOURCE:** Auditor's Office Analysis of Data Provided by Fleet Administration

**Cost per Mile**  
**Decreases as**  
**Utilization Increases**

The relationship between higher utilization and lower cost is because there are both fixed costs and variable costs to owning and operating a vehicle. The fixed costs are the cost of owning the vehicle (purchase cost), whereas the variable costs are the cost of operating, maintaining, and repairing the vehicle. If a vehicle is used more intensively (driven more miles per month), the fixed ownership costs are spread out over more miles, thereby lowering the cost per mile. Because the cost per mile decreases as utilization increases, using fewer vehicles to travel the same number of miles is less costly than using more vehicles.

**King County's Vehicle Utilization Policies**

None of the four agencies that operate fleets had policies that require standards for vehicle utilization. Fleet Administration publishes a target of 9,600 miles per year for vehicle utilization, but the target is not a policy, and is not enforced. Fleet

### Fleet Administration's Utilization Target Is Not Enforced

Administration does identify underutilized vehicles, which it defines as vehicles used less than 600 miles per month (in comparison to the 800-mile-per-month target). Fleet sends a letter to agencies with a list of underutilized vehicles, with a suggestion that the agencies rotate the vehicle with a vehicle for higher utilization, or consider whether it needs to keep the vehicle.

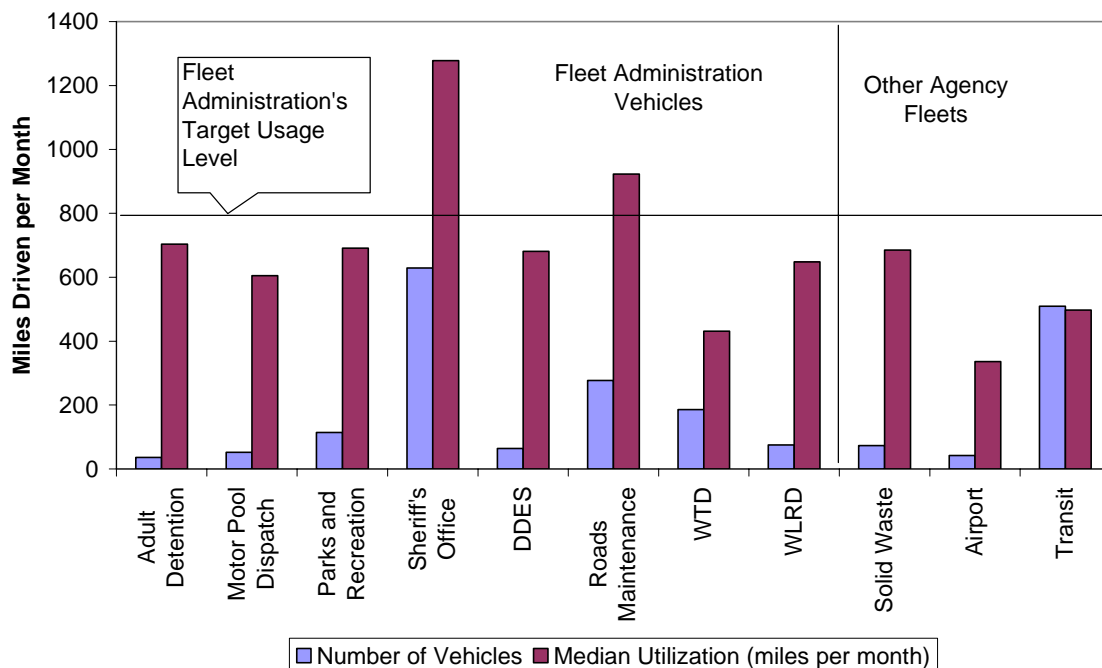
### Statistics on County Vehicle Utilization

Exhibit H illustrates the median amount of vehicle utilization in miles for the eight largest user agencies of Fleet Administration vehicles and for the other three agencies which operate their own fleets.

#### EXHIBIT H

#### Median Fleet Utilization per Month

#### County Vehicle Utilization By Agency



**SOURCE:** Utilization data provided by Fleet Administration, Solid Waste Division, King County Airport, and Transit Division

As this chart illustrates, out of Fleet Administration's largest customers, only vehicles operated by the Sheriff's Office and the Roads Maintenance Section of the Road Services Division are utilized sufficiently to meet Fleet Administration's 800-mile-per-month utilization target. The utilization of vehicles by several agencies is well below the target. For example, of the 965 vehicles owned by Fleet Administration that are not operated by the Sheriff's Office, almost 70 percent do not meet Fleet Administration's 800 mile per month utilization target, and almost 30 percent are utilized less than 500 miles per month. Increasing utilization, by using fewer vehicles more intensively, would lower costs.

#### **Vehicle Size, Utilization, and Cost**

We also looked at the relationship between vehicle size and cost. From reviewing data from the four agencies who maintain fleets, we noticed that the county owns very few subcompact or compact cars and a substantial number of larger cars, pickup trucks, SUV's, and vans. The following exhibit shows the composition of the county's light-duty vehicle fleets by vehicle class. For vehicles under the authority of Fleet Administration, we separated vehicles assigned to the Sheriff's Office from other vehicles because the nature of vehicles assigned to the Sheriff's Office (mostly full-size automobiles) is substantially different from those assigned to other agencies.



<b>EXHIBIT I</b>					
<b>Percent of Vehicles by Type</b>					
	<b>Fleet (Excluding Sheriff)</b>	<b>Fleet (Sheriff Only)</b>	<b>Transit</b>	<b>Solid Waste</b>	<b>Airport</b>
Subcompact or Compact Automobile	6%	0%	1%	11%	0%
Mid-Size Automobile	22%	22%	37%	4%	2%
Full-Size Automobile	2%	66%	7%	0%	40%
Pickup Truck	38%	1%	20%	53%	31%
SUV	10%	8%	3%	25%	12%
Van	22%	3%	32%	7%	14%

**SOURCE:** KCAO analysis

Because the county's light-duty fleets are so heavily comprised of larger vehicles (mid- or full-size automobiles, trucks, SUV's and vans), we attempted to quantify the additional cost of using larger vehicles versus smaller vehicles (compacts or subcompacts). In doing so, we noticed some surprising results. For example, in some cases, the data indicated that the cost per mile of larger vehicles was actually less than the cost per mile of smaller vehicles. However, because cost per mile is also highly influenced by vehicle utilization (i.e., the number of miles driven), we looked at how costs vary by vehicle size at various levels of utilization.

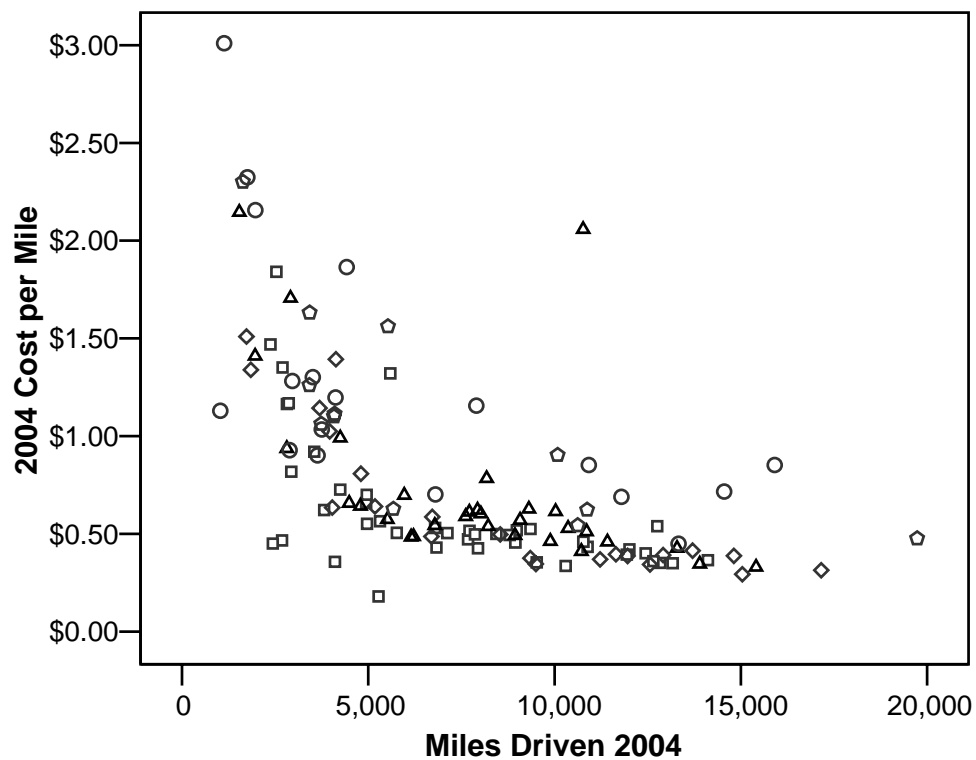
**Cost Are More  
Dependent Upon  
Utilization than Vehicle  
Size**

We found that while larger vehicles are, in general, more costly to own and operate than smaller vehicles, costs are influenced to a much greater extent by utilization than vehicle size. For example, a larger vehicle that is highly utilized is likely to be less costly to own and operate, per mile, than a smaller vehicle that is underutilized. This relationship is illustrated in the following chart, which looks at cost vs. utilization for various sizes of pickup trucks. The chart provides utilization and cost data for individual pickup trucks maintained by Fleet Administration. The

size of the vehicle is noted in the legend. As the chart illustrates, utilization, not vehicle size, is the primary determinant of cost per mile. Larger trucks that are highly utilized are typically less costly per mile than smaller trucks. There were similar patterns with respect to vehicle size, utilization, and cost per mile with automobiles, SUVs, and vans.

#### EXHIBIT J

#### Fleet Pickup Trucks – Cost per Mile Affected More by Utilization than by Vehicle Size



Size of Vehicle

□ Pickup - 1/4 ton	△ Pickup - 3/4 ton	⬠ Pickup - 1.5 ton
◇ Pickup - 1/2 Ton	○ Pickup - 1 ton	

**SOURCE:** Auditor's Office analysis of utilization and cost data provided by Fleet Administration

#### County Runzheimer Program Utilization and Cost

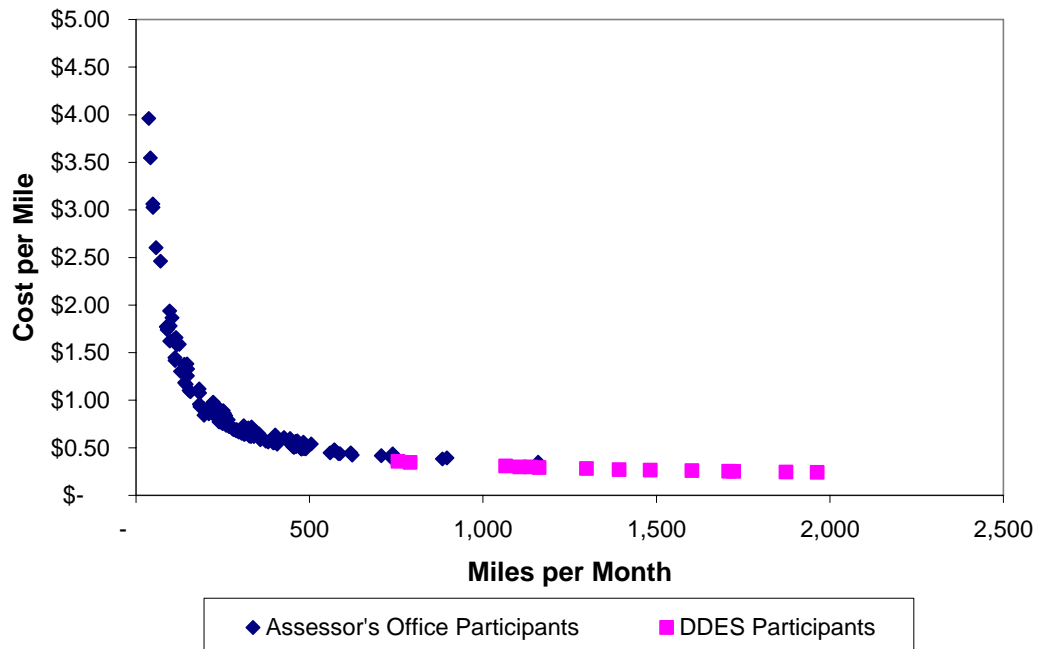
Two county agencies, the Department of Development and Environmental Services (DDES) and the Assessor's Office, use a

formula purchased from the Runzheimer Corporation to reimburse employees who use their personal vehicles for business travel, rather than using county fleet vehicles. These are known as Runzheimer programs. There are 14 participants in the DDES Runzheimer program, and 123 in the Assessor's Office Runzheimer program. For this audit, we assessed the cost-effectiveness of these programs, based on cost per mile of operation, by comparing the cost of the programs to the estimated cost if Fleet Administration vehicles were used instead.

**Cost per Mile for  
Runzheimer Program  
Participants Dependent  
Upon Utilization**

The Runzheimer formula includes a fixed monthly reimbursement to cover the ownership cost of a vehicle, and a variable, per-mile reimbursement to cover operating, maintenance, and repair costs. Because employees receive the fixed monthly reimbursement regardless of the number of miles driven, the cost per mile of the Runzheimer programs is strongly influenced by utilization. Similar to the cost characteristics of county fleet vehicles, as the number of miles driven increases, the cost per mile of the Runzheimer programs decreases. This relationship can be seen in Exhibit K, which uses utilization and cost data of participants in the two Runzheimer programs.

**EXHIBIT K**  
**Runzheimer Program Cost per Mile Decreases as Utilization Increases**



**SOURCE:** Auditor's Office analysis of data provided by the Assessor's Office and DDES

**Average Cost per Mile  
for the Assessor's  
Office Is Double That  
of DDES**

As the chart above illustrates, the Assessor's Office employees participating in the Runzheimer program use their personal vehicles for business purposes fewer miles per month, on average, than participants at DDES. Therefore, the average cost per mile for Assessor's Office participants is more than double the average cost per mile for DDES participants, as illustrated in the Exhibit L below.

**EXHIBIT L**  
**DDES and Assessor's Office Runzheimer  
Program Utilization and Costs**

	DDES Runzheimer Program	Assessor's Office Runzheimer Program
Average Miles per Month	1,361	309
Average Cost per Mile	\$0.27	\$0.68

**SOURCE:** Auditor's Office analysis of data provided by the Assessor's Office and DDES

**The Assessor's Office  
Could Save Up to  
\$140,000 per Year by  
Ending Its Runzheimer  
Program**

In comparing the cost of the Runzheimer programs with the estimated cost of using Fleet Administration vehicles, we found that the Assessor's Office could save an estimated \$140,000 per year by using Fleet Administration vehicles. The savings that would be generated by using 46 Fleet Administration vehicles is approximately 9,600 miles per year rather than using 123 private vehicles an average of 3,700 miles per year.<sup>8</sup>

For the purpose of this estimate, we calculated 46 vehicles based on the number of miles driven by Assessor's Office employees divided by 9,600 miles per year (Fleet Administration's utilization target). It is possible that actual savings could be more or less than our \$140,000 per year estimate and would depend on the number of vehicles that the Assessor's Office requires to fulfill its business needs. If the Assessor's Office could fulfill its travel needs with fewer than 46 vehicles, the savings would be greater than our estimate, and vice versa. Additionally, the Assessor's Office has also indicated that it could also save on parking costs if Fleet Administration vehicles are used instead of employee's private vehicles, as they are required by a collective bargaining agreement to pay for employee's parking if they are required to use their private automobile for work. The Assessor's Office indicates it spends about \$75,600 annually for parking.

It should also be noted that the full \$140,000 per year of estimated savings would not occur immediately. If a switch is made to Fleet Administration vehicles, new vehicles would need to be purchased from Fleet Administration. Assuming that the initial purchase price is charged to the Assessor's Office over the life of the first vehicle (the monthly rental rate already includes an

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<sup>8</sup> The savings estimate is hypothetical based on the assumption that the Assessor's Office could utilize 46 vehicles at Fleet Administration's target of 9,600 miles per year. Actual savings would be dependent on the number of vehicles that would be needed to meet the business needs of the office.

amount to replace the vehicle), we estimate that the estimated annual savings to the Assessor's Office by switching to Fleet Administration vehicles would be temporarily reduced to \$45,000 per year for the first eight years while the initial purchase price is being paid off.

Finally, in comparing the cost of the DDES Runzheimer program with the cost of using Fleet Administration vehicles, we found that the DDES Runzheimer program is slightly less costly. This is due to the high amount of miles driven by the 14 DDES Runzheimer participants. Because these vehicles are utilized more extensively, the cost per mile is significantly lower than the Assessor's Office Runzheimer program and slightly lower than if Fleet Administration vehicles were used.

### **Conclusions and Recommendations**

#### **Underutilized Vehicles Drive Up County Fleet Costs**

Underutilizing vehicles adds to the cost of a fleet. King County has no policy establishing vehicle utilization standards, and with the exception of Sheriff's Office police vehicles and vehicles used by the Roads Maintenance Division, most county vehicles do not meet Fleet Administration's target for vehicle utilization of 800 miles per month. If utilization is measured as the number of miles driven per month, a large number of vehicles are significantly underutilized in comparison to Fleet Administration's utilization target. No data is available on the proportion of time that vehicles are not being driven but may still be required for business purposes. However, given the strong association between utilization and costs, and therefore, the potential for saving money if vehicle utilization is improved, we believe it is in the county's interest to pursue ways to ensure that vehicles are being used cost-effectively. We therefore make the following recommendations.

**RECOMMENDATION 8** The County Executive should establish a vehicle utilization policy, and appoint a committee of user agencies to establish criteria for exceptions to the policy and to monitor individual agency's compliance with the policy.<sup>9</sup>

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**RECOMMENDATION 9** The Assessor's Office should discontinue using the Runzheimer program and identify a less costly alternative for providing for employee business travel needs. Such alternatives may include, but are not limited to, one or more of the following:

- Using Fleet Administration vehicles (either assigned vehicles or Motor Pool vehicles).
- Using a different formula to reimburse employees for using their personal vehicles for business purposes (this option may require amending the Collective Bargaining Agreement with employees).
- Using vehicles rented from the private sector (to supplement other options when needed).

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<sup>9</sup> Establishing a vehicle utilization committee is cited as a best practice for controlling vehicle utilization in a National Association of Fleet Administrators (NAFA) publication titled "Rightsizing Your Fleet."

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## **APPENDICES**

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## **LIST OF RECOMMENDATIONS & IMPLEMENTATION SCHEDULE**

**Recommendation 1:** Fleet Administration should use the discount rate recommended by OMB for the MACE vehicle replacement model.

**Implementation Date:** July 1, 2007

**Estimate of Impact:** Using the OMB rate would bring Fleet Administration into compliance with county policy, and it does not impact the model's analysis.

**Recommendation 2:** Transit should review a full year of operations and maintenance data for vehicles in the non-revenue fleet to assess whether its costs are comparable to the fleet covered by MACE. If Transit's data differs significantly from Fleet Administration's data, Transit should develop its own fleet replacement criteria.

**Implementation Date:** 2009 Budget Submittal

**Estimate of Impact:** Assessing whether Fleet Administration's criteria is appropriate for Transit's fleet will help ensure that Transit uses replacement criteria that minimizes its lifecycle costs.

**Recommendation 3:** King County fleet management agencies should establish performance measures and performance targets to monitor their adherence to vehicle replacement policies and to communicate the effectiveness of their fleet replacement programs.

**Implementation Date:** July 1, 2007

**Estimate of Impact:** Adopting performance measures and targets will allow management of the different agencies to highlight areas of the replacement program that are performing well and identify areas that require attention. In addition, the measures and targets will allow those with oversight responsibilities to determine, for instance, whether the fleet management agency is following its own replacement policies, how much sooner (or later) vehicles are being replaced, and whether the current fleet is nearing replacement.

**Recommendation 4:** Fleet Administration should make its chargeback rate model more transparent and accessible to the agencies that use motor pool services.

**Implementation Date:** Immediately

**Estimate of Impact:** By making the chargeback rate model more transparent and accessible, users of Fleet Administration services will gain a better understanding of the components that are used in the yearly development of rates. It will also allow users to understand why they are charged the specific rate and will add insight about the value of services provided by Fleet Administration.

## **LIST OF RECOMMENDATIONS & IMPLEMENTATION SCHEDULE (Continued)**

**Recommendation 5:** Fleet Administration should establish rates that fully recover costs and maintain the Motor Pool Fund balance within the range mandated by executive policy.

**Implementation Date:** July 1, 2007

**Estimate of Impact:** Making sure that rates fully recover costs will ensure not only the timely replacement of vehicles but will also maintain current fleet vehicles in proper and safe working conditions. In addition, it would allow Fleet Administration to maintain the motor pool fund balance within the range required by executive policy.

**Recommendation 6:** Fleet Administration should submit a revised financial plan for 2007 to the County Council by June 30, 2007.

**Implementation Date:** June 30, 2007

**Estimate of Impact:** Updating the 2007 Motor Pool Fund Proposed Financial Plan will show what effects the additional \$1.8 million in fund balance will have on the short-term and the long-term financial health of the fund.

**Recommendation 7:** Fleet Administration should review its procedures over the recording and reconciling of fund expenses to ensure that information reported in county financial systems is complete and accurate.

**Implementation Date:** Immediately

**Estimate of Impact:** Making sure that errors and discrepancies are caught and corrected in a timely manner will ensure a complete and accurate picture of the financial health of the fund.

**Recommendation 8:** The executive should establish a vehicle utilization policy and appoint a committee of user agencies to establish criteria for exceptions to the policy and to monitor individual agency's compliance with the policy.

**Implementation Date:** January 2008

**Estimate of Impact:** Unquantified cost savings resulting from avoiding the ownership costs of underutilized vehicles. The amount of cost savings would be dependent on the number of vehicles that could be reduced from the fleet.

## **LIST OF RECOMMENDATIONS & IMPLEMENTATION SCHEDULE (Continued)**

**Recommendation 9:** The Assessor's Office should discontinue using the Runzheimer Program and identify a less costly alternative for providing for employee business travel needs. Such alternatives may include, but are not limited to, one or more of the following:

- Using Fleet Administration vehicles (either assigned vehicles or Motor Pool vehicles)
- Using a different formula to reimburse employees for using their personal vehicles for business purposes (this option may require amending the Collective Bargaining Agreement with employees)
- Using vehicles rented from the private sector (to supplement other options when needed)

**Implementation Date:** January 1, 2008

**Estimate of Impact:**

We estimate that the Assessor's Office could save \$45,000 per year for 8 years, and \$140,000 per year thereafter, if it used 46 fleet vehicles rather than reimburse 123 employees for using their personal vehicles. Actual savings would be dependent on the number of vehicles that the Assessor's Office requires to fulfill their business needs.

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## EXECUTIVE RESPONSE



### King County

**Ron Sims**

King County Executive

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Seattle, WA 98104

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www.metrokc.gov

**KING COUNTY AUDITOR**

**MAY 07 2007**

**RECEIVED**

May 4, 2007

Cheryle A. Broom  
King County Auditor  
Room 1020  
COURTHOUSE

Dear Ms. Broom:

Thank you for providing us with the opportunity to respond to your proposed final report on the *Performance Audit of County Vehicle Replacement*. We generally concur in your recommendations.

Some of the recommendations you provided are existing practices within Fleet Administration. We concur with your recommendation for performance measures and we agree that performance measures are good indicators for managing a fleet organization. We also believe that the performance measures Fleet Administration has in place are effective and we will continue their use. However, Fleet will continue to consider any opportunities to improve its measurement of performance.

We appreciate the courteous and professional manner in which your staff conducted its work. If you have questions about our response or the status of implementation of your recommendations, please contact staff in the affected agencies.

Attached are our specific responses to your recommendations, presented in the format which was requested.

Sincerely,

Ron Sims

King County Executive

cc: Sheryl Whitney, Assistant County Executive  
Kurt Triplett, Chief of Staff, Office of the King County Executive  
Harold Taniguchi, Director, Department of Transportation (DOT)  
Bob Cowan, Director, Office of Management and Budget  
Robert Burke, Director, King County International Airport  
Windell Mitchell, Director, Fleet Administration Division, DOT  
Pam Bissonnette, Director, Department of Natural Resources and Parks (DNRP)  
Theresa Jennings, Director, Solid Waste Division (SWD), DNRP  
Brad Bell, Operations Manager, SWD, DNRP  
David Lawson, Manager, Executive Audit Services



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## EXECUTIVE RESPONSE (Continued)

### Executive Response to Performance Audit of County Vehicle Replacement

Recommendation	Agency Position	Schedule for Implementation	Comments
1. Fleet Administration should use the discount rate recommended by Office of Management and Budget (OMB) for the MEAN Annual Cost Equivalent (MACE) vehicle replacement model.	Concur	July 1, 2007	<p>Fleet Administration acknowledges the use of seven percent as discount rate for capital projects. Fleet will use that rate while it attempts to obtain a deviation from OMB.</p> <p>Fleet presently uses the interest rate that the Fund would normally earn if vehicles were not purchased. The three percent (3%) is the opportunity loss from not investing the money. The average net investment interest rate earned for 2004 was 2.1%, and 2005 was 2.9%. Three percent (3%) discount rate was used in the 2006 MACE model based on the historical interest earning rates.</p> <p>Fleet will submit a written request to OMB with its rationale, for permission to deviate from this seven percent guideline.</p>
2. Transit should review a full year of operations and maintenance data for vehicles in the non-county fleet to assess whether its costs are comparable to the fleet covered by MACE. If Transit's data differs significantly from Fleet Administration's data, Transit should develop its own fleet replacement criteria. 3. King County fleet management	Concur	Transit will be evaluating data from the period of July 1, 2007 through June 30, 2008 in order to assess whether or not the criteria should be revised. Any revisions would be incorporated as part of the 2009 budget process.	Fleet Administration will track and



## EXECUTIVE RESPONSE (Continued)

### Executive Response to Performance Audit of County Vehicle Replacement (Continued)

agencies should establish performance measures and performance targets to track and communicate the effectiveness of their fleet replacement programs.			report on the three performance measures recommended by the Auditor: <ul style="list-style-type: none"> <li>Percent of vehicles replaced compared to those identified by the replacement criteria.</li> <li>Average deviation from replacement criteria.</li> <li>Average vehicle age/mileage</li> </ul>
3. King County Fleet management agencies should establish performance measures and performance targets to track and communicate the effectiveness of their fleet replacement programs.	Concur	During the remainder of 2007, Transit will continue to build upon the performance measures currently reported. Vehicle Maintenance's 2007 Year-End Performance Report will include a section on these measures to provide them with visibility throughout the organization.	
3. King County fleet management agencies should establish performance measures and performance targets to track and communicate the effectiveness of their fleet replacement programs.	Concur.	The Airport will review all of 2007 maintenance and operation cost in 1 <sup>st</sup> quarter 2008 and develop a program in 2008 for deployment in 2009.	
4. Fleet Administration should establish rates that fully recover costs and maintain the Motor Pool Fund balance within the range mandated by executive policy.	Concur	Existing practice	Fleet Administration reviews its vehicle rates annually and uses all anticipated proceeds from all sources of income (non-operating revenues) other than rental revenues in its revenue recovery to recover costs and maintain the Motor Pool Fund Balance.
5. Fleet Administration should make its chargeback rate model more transparent and accessible to	Concur	July 1, 2007	Fleet Administration will make the chargeback rate model with formulas available to agencies.

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## EXECUTIVE RESPONSE (Continued)

### Executive Response to Performance Audit of County Vehicle Replacement (Continued)

the agencies that use motor pool services.				
6. Fleet Administration should submit a revised financial plan for 2007 to the County Council by June 30, 2007.	Concur	Completed		
7. Fleet Administration should review its procedures over the recording and reconciling of fund expenses to ensure that information reported in county financial systems is complete and accurate.	Concur	Existing practice		Fleet Administration has a longstanding practice of reviewing its procedures over the recording and reconciling of fund expenses to ensure that information reported in county financial system is complete and accurate.
8. The County Executive should establish a vehicle utilization policy, and appoint a committee of user agencies to establish criteria for exceptions to the policy and to monitor individual agency's compliance with the policy.	Concur	January 2008		All affected agencies will be invited to participate in committee activities and policy recommendations.

## ASSESSOR RESPONSE



King County  
Department of Assessments  
King County Administration Bldg.  
500 Fourth Avenue, Room 704  
Seattle, WA 98104-2384

(206) 296-5198 FAX 296-0595

KING COUNTY AUDITOR


MAY 02 2007

RECEIVED

Scott Noble  
Assessor

Date: May 1, 2007

To: Cheryle A. Broom, King County Auditor

From: Scott Noble, King County Assessor 

Re: Response to performance audit of county vehicle usage

Thank you for this opportunity to respond to the performance audit of county vehicle usage. Overall the report seems to be informative. This department does, however, take exception to one of the conclusions and recommendations. Specifically let me respond to the recommendation pertaining to Assessments.

**Recommendation #9: Do not concur**

The department agrees that the system of using personal employee vehicles (Runzheimer program) versus county fleet vehicles should be given further evaluation. To conclude, however, that simply using 46 fleet vehicles to replace the 123 personal vehicles would bring King County huge savings is **questionable** and is based solely upon theoretical analysis. While it might be possible to do so, the seasonal nature of Assessments' work might preclude it from being realistic.

The work performed by this department is not divided equally among each of the twelve months of the year. At different times portions of our work peak and require a concentrated use of resources. The prime example of this is the identification of new construction. By statute the department can add any new construction that occurred prior to August 1 of any given year to the tax rolls. The department has until the end of August annually to be in the field and to identify such new construction and add it to the rolls. Historically this has meant a heavy concentration of appraisers all in the field during the spring and summer of the year. Typically far more than 46 appraisers are out on any given day. If the department were to switch to a fleet vehicle system, and if only 46 appraisers could be deployed at any one time, then the real likelihood is that the **new construction numbers of all 166 taxing districts in King County would decline, including the State of Washington. This decrease in new construction would offset any gains made using the fleet vehicle system.**

## **ASSESSOR RESPONSE (Continued)**

The department respectfully suggests that the recommendation be amended to “analyze” rather than “discontinue” using the Runzheimer program so that it can be determined whether or not a modified system would benefit King County.

## AUDITOR'S COMMENTS ON ASSESSOR RESPONSE

We agree with the Assessor's Office that more work needs to be done to identify the most cost-effective alternative to meet employee business travel needs. However, we disagree that the recommendation should be amended to eliminate the language requesting the Office to discontinue Runzheimer program. We believe the evidence is compelling that the Runzheimer program is not cost-effective as used by the Assessor's Office, and its use should be discontinued.

The Runzheimer program is a cost-effective alternative when vehicles under the program are highly utilized. Thus, the program costs only 27 cents per mile at Department of Developmental and Environmental Services (DDES), where employees drive their personal vehicles an average of 1,361 miles per month for business purposes. In contrast, Assessor's Office Runzheimer participants are reimbursed an average of 71 cents per mile while driving an average of less than 300 miles per month for business. Because the Runzheimer formula includes a fixed monthly payment to participants, employees receive a monthly payment of as much as \$172, even in months where they drive few or even no miles for business purposes. For example, in 2006, an Assessor's Office employee was reimbursed a total of \$1,399, or \$5.32 per mile, while driving her vehicle only 263 miles for business travel. There are numerous instances in which Assessor's Office employees received monthly reimbursements for using their personal vehicles, but did not use the vehicle for business that month.

The Assessor's Office point about the seasonality of their work is an issue that should be taken into account when the Office explores cost-effective options for replacing the Runzheimer program. However, we do not believe it is a compelling argument for retaining the program. Even in the peak month of vehicle usage, Assessor's Office Runzheimer participants only use their vehicles an average of about 425 miles for business purposes. At 425 miles per month, the cost the Runzheimer program is above 50 cents per mile. Therefore, even in the peak month, the cost per mile of the Assessor's Runzheimer program exceeds the 27 cent per mile monthly average cost per mile of the DDES Runzheimer program, and is well above the average cost per mile for using Fleet Administration vehicles. Even the Assessor's Office peak usage is below the level that would make the Runzheimer program cost-effective.

There are other less costly options for addressing peak period travel requirements. For example, the Assessor's Office could utilize a sufficient number of assigned Fleet vehicles to meet the normal monthly travel requirements, and use additional Motor Pool dispatch vehicles to meet their peak period needs. The report lists other options as well. However, our intent is not to limit the number of options to be considered. The Assessor's Office should explore any option that provides the most cost-effective solution for meeting employee travel requirements while fulfilling the business needs of the Office.

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